



INTRODUCTION

When people are exposed to hot environments the natural response of the body is to sweat, which helps to cool the internal body temperature by carrying cooled blood from the skin. This is part of a very important process to regulate core body temperatures in hot environments. This innate cooling response helps the body maintain a fairly stable temperature required for normal, healthy functioning. Human beings are sensitive to fluctuations in temperature, especially heat, which is poorly tolerated in excess of 4-5° above normal. Heat stress is defined as the total net heat load on the body, with contributions from exposure to external (environmental) sources, and internal metabolic heat production. The following are the different conditions associated with heat stress.

Heat Related Illnesses and Their Symptoms

Heat Rash - Heat rash is common in hot, humid weather. When sweat ducts become blocked, perspiration is trapped beneath the skin and may result in blisters or deep red lumps. Heat rash will usually go away on untreated, but severe cases may require medical treatment. Keeping skin clean and dry will help prevent an outbreak.

Heat Cramps – Muscle spasms which are involuntary and can be very painful are sometimes experienced during heavy work in hot weather. Calves, arms, abdomen and back are the most common locations for heat cramps to occur; but they are not limited to these muscles. Any muscles used during prolonged exertion in heat may experience heat cramps. The spasms are intense and may be more prolonged than typical muscle cramps.

Heat Exhaustion – Heat exhaustion is a result of the body overheating in exposure to high temperatures and is compounded by humidity and heavy work. Symptoms include heavy sweating, rapid pulse, moist, clammy pale skin, dry mouth, extreme weakness and fatigue, dizziness, and nausea. Persons experiencing heat exhaustion should seek treatment as soon as it is recognized to prevent progression to heat stroke.

Heat Stroke – Sweating causes water and electrolytes, such as salt, to be lost from the body. When the fluids and electrolytes are not replaced people run a risk of suffering from a life threatening condition called heat stroke. Essentially, heat stroke occurs when the process for cooling the body in extreme heat fails, and core body temperature is no longer well regulated. When excess heat remains trapped in the body, one's internal temperature may rise beyond 104° F. This severe heat illness may result from strenuous exertion in the heat with inadequate fluid replacement. Certain medications, alcohol use and preexisting dehydration may exacerbate the risk of heat stroke. Signs to look for are changes in personality and mental state, confusion, dilated pupils, rapid pulse and possibly coma. Immediate assisted cooling should be urgently sought.



Heat Related Illness

Tips for Prevention

Acclimatization – When exposing yourself to warmer climate, allow yourself to adjust to the heat slowly through short exposure periods which gradually lengthen until you become accustomed to the heat. Under some circumstances it may take up to a week to acclimatize.

Hydrate!! - Replenish fluids that are lost through sweating. Electrolytes such as sodium, potassium and calcium are important to replace, so consider using electrolyte drinks when you have prolonged exposure to heat. Fluids should be consumed before you feel thirsty and throughout your sun exposure. Do not forget to continue drinking fluids even while not working. Hydrate at least every half hour.

Work/Rest– When working in the heat take adequate rest periods, in the shade when possible, to allow your body to cool.

Education – Know how to prevent and treat heat related illnesses. Be proactive; bring lots of fluids with you, and a source of shade if needed.

Discussion

- In hot, humid temperatures, heat illness is a major concern. High temperatures stress the body's natural cooling efficiency. It is very important to be aware of the signs, symptoms and treatments for the three major types of heat illness: heat cramps, heat exhaustion and heat stroke.

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